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Waiting for the Unforeseen: Connectivity and Fluidity in Organizational Communication

Abstract In contemporary organizations, coping with change largely involves getting a reliable picture of a situation in a highly unstable environment, in order to promptly support the continuum of decision and action. Therefore, communication is required to overcome traditional models based on spatial metaphors, turning to organizing as a process developed through connectivity and fluidity. In an increasingly complex, widespread, and virtual communication context, the need for connectivity tends to question the usual organizational compartmentalization, based on clearly marked boundaries. Facing the need for effective answers in real time, separation of spaces and functions withdraws, leaving room for blended areas and temporary patterns centered on the ability to overlap knowledge and resources in an integrated way. This kind of emergent coordination is founded on the one hand on objects – as artifacts allowing for mediating actions and relationships, and on the other hand on language – as instrument of constant weaving of communicative frames. As a result, a “surface”, a non-linear, rhizomatic model of communication arises. At the same time, connectivity development is greatly dependent on fluidity as a crucial factor. Producing new structures of meaning on the spot calls for fluidity as the ability to “stream into discontinuity”, dealing with new and undefined situations. Such situations are only partially manageable with reference to rules and guidelines, conversely demanding the continual search for workable and shared solutions. Consequently, a design model emerges as a new kind of organizational communication able to work by employing provisional schemes, and utilizing ambiguity naturally embedded in situations as a resource. Drawing examples from EMS – as an organizational context highlighting the effective management of change under pressure – we show how the creation of fluid connections gives rise to light and modular communicational arrangements, providing provisional but highly-reliable organizational structures, based on netlike adaptability to different events and contexts.

Key Words: connectivity, fluidity, boundaries, design, ambiguity

Introduction

As is commonly admitted in management literature, contemporary organizations are increasingly operating in a highly unstable environment that asks for effective answers in real time despite the lack (or more often the overabundance) of information. From the postmodern vantage point, change is no longer conceived as a transitional breakdown bursting onto a relatively constant landscape. On the contrary, change is becoming the rule, as a steady and quiet condition represents the exception by now. Facing every day with turbulent contexts and unforeseen events, organizations are currently required to learn how to manage communication in order to ensure good performances not in spite of, but thanks to the fluctuating circumstances that affect decisions and actions. Aiming to broaden our understanding of this phenomenon, we turned to the study of the Emergency Medical Service as an organizational context suitable for analyzing the role
of communication in effective management of change under pressure. To that end, we adopted an ethnographic approach, spending four months in attending the activities of EMS staff at work in the control room of a large hospital in the north of Italy. Beyond observations and semi-structured interviews with the EMS teams, we were allowed to access the records of telephone conversations between operators and callers made during this period. Excerpts of the calls, transcribed according to the conversation analysis principles, are produced and commented on in the article, as we try to highlight how connectivity and fluidity emerge as core elements of developing communication in organizations whose activities are structured around emergencies as a normal, customary state.

Connectivity in Organizational Communication

In organizational literature, we can identify three main metaphors which represent connectivity as a space, object, or process (Cornelissen and Kafouros: 970). The first metaphor – connectivity as a space – is traditionally related to the conception of organization as a structure which has internal and external boundaries. Organizational boundaries, however, are often assumed to have negative connotations in management research. As a concept essentially based on a spatial representation, boundaries are seen as lines, or delimitations which aim to separate different parts of an organization. Nowadays, these delimitations are becoming more and more detectable due to the increasing specialization of contemporary work in organizations where departments and teams are structured around specific goals and functions in order to provide better performances. So the division between “poor” and “rich” jobs (that is, repetitive or creative assignments) has become more and more relevant.

As a consequence of this highly specialized division of labor, the efficiency of organizational communication often decreases because of the tendency for social interaction to develop mainly within the group, as contact with other units may easily be limited or critical. This problem typically arises in organizations based on the traditional matrix management.

There is a natural trend for business organizations to operate in functional silos, a form of vertical isolation. The central goal of integration is to overcome these boundaries between and among the various units to improve the results of overall organization (Colley et al., 2007: 347).

So, quite paradoxically, organizations continually lay out boundaries aimed at developing connections and specifying their identity. But at the same time, they have to address recurrent communication issues that arise from these boundaries. To be resolved, this paradox requires a conceptual shift enabling us to overtake both the matrix model and the spatial metaphor.

Sharing boundaries

In recent years, research on boundary objects has emerged as a strong alternative theory on these subjects. Boundary objects are "objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites" (Star and Griesemer, 1989, 393).
The same object (e.g., the ambulance siren) is universal enough to be recognized by everyone. But at the same time, its meaning is different depending on whether we are simply driving along the street or offering professional assistance in a hospital emergency room. So the same sound participates in two different worlds, becoming a means of translation.

The conceptual shift created by the notion of a boundary object is twofold. On the one hand, the abstract, geographical image of the boundary as a dividing line is disappearing and making room for a concrete, situated artifact that produces categorization work. On the other hand, apart from the line, this object not only separates but at the same time connects different social worlds.

But what happens when communication occurs on a professional level? We know that the regular driver and the ambulance driver share a basic message (“ongoing emergency situation”), but for the latter, the siren also implicates the management of very complex meanings and behaviors (for example, reconciling speed and safety at the same time). To appreciate the positive effects of boundary objects within organization, we need to gain access to shared professional knowledge, in some measure. In this respect, some organizations benefit from the communication work done by boundary objects more than others. According to Sapsed and Salter, "the marginal nature itself of boundary objects can limit their communication potential when the organization is structured in a rigid, vertical way" as the matrix model, generally, supposes (Sapsed and Salter, 2004, 1515-1533). Therefore, the efficacy of boundary objects cannot be related to all kinds of organization – as a sort of communication panacea – but to a more specific one: the community of practices.

According to Wenger, communities of practices are characterized by three main dimensions: mutual engagement, joint enterprise, and shared repertoire – which allow people to become effective members of a team within the organization, through a dynamic participation process (Wenger, 1999, 72-84). This participation is developed by the interaction of a group actively sharing information, insight, and advice and aiming to deepen collective knowledge and expertise on an ongoing basis. To some extent, this process also involves creating and maintaining a continuous exchange of information between the various teams that are working within the organization. Establishing connections between different work-groups, boundary objects are precisely “those objects that both inhabit several communities of practice and satisfy the informational requirements of each of them" (Bowker and Star, 1999, 297).

Living in interstices

If we assume boundary objects as a means to establish and strengthen relationships between organizational communities, the previous definition of a boundary as a principle of separation appears to be overturned. Communities of practices are founded on sharing experience (especially between old-timers and newcomers), as boundary objects allow for the sharing of knowledge, building bridges across different communities of practices. So, boundaries include much more than they exclude.

Nevertheless, some questions arise from an in-depth analysis of this pattern. Firstly, focusing organizational communication on the objects shared by communities we risk underestimating the complexity of interactions, replacing one simplification (the vertical, “authoritarian” matrix model) with another (the horizontal, “democratic” community model). However, as we will see later, objects and communities are not neutral in terms of the negotiation of meaning and power. Moreover, the notion of participation, which is unproblematic at first glance, involves a certain degree of
uncertainty. For example, throughout their lives, organizational actors are simultaneously involved in several communities of practice whose claims are not always compatible.

Individuals maintain a sense of agency through the adoption and adaptation of different forms of participation and identity construction within different communities. This approach recognizes that attempts to adapt will generate tensions within individuals, and instabilities within the communities in which they participate. These tensions are likely to be continually negotiated but never fully resolved. Indeed, one could argue that the site for the development of identities and practices is not solely within a community of practice but in the spaces between multiple communities. (Handley et al., 2006, 650)

Thus, in modern organizations, participation generally involves spending a growing amount of time in these spaces between different communities, and trying to manage their conflictual claims for availability, accountability, and loyalty.

**Fragmented patterns**

From the organizational standpoint, communication is directed both at the center of community life and its edges. We want to become full members of the group, being legitimated to gain access to the central positions inside the community (or, at least, holding our current position and avoiding being marginalized). At the same time, we must be careful about external contacts, which require maintaining good relationships with the other different teams and departments that we depend on.

However, in contemporary organizations, the condition of belonging to a group is rarely achieved. Today, organizations increasingly outsource their services, buying work from external providers for a limited period of time. So there is neither time nor a way to build teams or share experiences in a world based on contingent contracts and indirect relationships. Connections and boundaries are dramatically redrawn by this kind of temporary work: no more lines or objects, but wide and empty spaces in a kind of no man’s land, where benchmarks are limited, communication is often unidirectional, and people frantically move in an individualized and insecure way.

In the landscape produced by such a fragmented work, organizational boundaries become blurred. The traditional vertical structure of bureaucratic organization – intended as a discrete entity – weakens, being replaced by temporary alliances with other organizations, which never conduct, however, to building a permanent network. So, “it is often unclear where one organization ends and another begins (Marchington, 2005, 2)”. Therefore, instead of supporting new organizational patterns, such a blurring of boundaries leads to the development of hybrid elements within established organizational forms.

**Mixing and blending**

Blurring boundaries, concealing connections, and covering tracks are not neutral activities. Rather, they represent real strategies to generate fragmentation and waste in organizational communication. By producing a state of disorientation, such strategies allow for the weakening of the rights and, in some way, the identities of workers, creating conditions for further exploitation and the financialization of the labor market.

So “orthodoxy is unconsciousness”. But is such an Orwellian scenario the only one we can conceive regarding the role of connections in organizational communication?
our opinion it is not. There is also a positive way of thinking about mixing organizational boundaries. Let us turn to the considerations developed by Fauconnier and Turner to illustrate this point. They introduced the useful notion of blending as a process that allows for the production of dynamic integration, creating a new emergent structure from previous patterns.

Building an integration network involves setting up mental spaces, matching across spaces, projecting selectively to a blend, locating shared structures, projecting backward to inputs, recruiting new structure to the inputs or the blend, and running various operations in the blend itself (Fauconnier and Turner, 2002, 44).

For example, in the EMS analyzed by our study, the physical structure of the space allows each operator to access different devices, such as computerized and paper maps, radio transmitters, telephones, manuals, and two screens (the first one showing the current location of ambulances, the other the progress of rescue activities). The specific blend of rescue services doesn’t rely simply on this set of devices, but in a particular way the operator chooses to “assemble” them according to the peculiarities of each emergency call. Through this process, the different inputs are – in Fauconnier and Turner’s terms – composed (configuring new relations between the elements), completed (placing those relations in a common background), and elaborated (using mental images to create a new, dynamic pattern). This way, a rapid and effective response to an emergency call is achieved, “running the blend”.

Connecting organization areas

Recently, Hutchins clarified usefully, that the process of “running the blend” may increase organizational communication, establishing a deeper connection between conceptual and material structures (Hutchins, 2005, 1555–1577). Revisiting Fauconnier and Turner’s theory, he suggests that some features (i.e. people queuing in line) can be seen as a “material anchor”, that is, material structures allowing for an increase in the stability of conceptual representations. As some mental characteristics are embodied in their configuration, material artifacts become “anchors”, reliable patterns producing more complex meanings from the emergent blending of conceptual and physical elements.

For example, in the EMS, observed staff often complained about the computer because of its limited capacity to identify ambulances. The system allowed staff to ascertain the number and position of each ambulance, but it didn’t provide information about the names of members of different crews during the shift. Some operators felt that this kind of impersonal relationship with the crews was a strong limit in emergency work, claiming that more personal contact generally results in the better management of complex communications in emergency situations. So operators usually put some Post-it notes on the side of the screen with a daily list of names of crew members. This practice was in conflict with the guidelines of EMS – based on a model of impersonal relationships as the best way of managing medical emergencies – but widely tolerated in practice.

This informal use of notes shows how the blend of official (computer) and unofficial (Post-it) artifacts can generate a new configuration as a conceptual and material anchor leading to new organizational arrangements. More broadly, the example emphasizes the role of communication in organization as a process involving different kinds of areas: “green”, defining the boundaries of the expected performances; “red”, defining undesired behaviors; “white”, offering scant or blurred information; and “gray”, where
flexibility and creativity can be cultivated by organization (or, at least, implicitly tolerated).

**Turn on the network**

Although valuable, it should be noted that the distinction between different organizational domains tends to bring us back to the previous spatial metaphor. Even if useful, the representation of connectivity as an object building relations – bridges between different areas or activities inside and outside of an organization – seems to pay particular attention to the structural outlook of organizations, drawing us away from a more dynamic view. Essentially, in organizational communication, artifacts are benchmarks, as they represent interaction which is embodied, stratified, and opened to different uses. Artifacts are facilitators, that is, they have a quality of affordance which is a key issue in promoting interaction (Gibson, 1977; Gaver, 1996; Norman, 1990; Kirschner et al., 2004).

At the same time, this special feature of knowledge embedded in artifacts can be activated only if interaction “turns on” the affordance, actualizing its potential. Without interaction artifacts, there are only good intentions, because communication is a living, ongoing interaction, an evolving property of relationships emerging through the mediator role of artifacts. For example, an ECG can tell us an interesting and, sometimes, impressive story about a patient, if we are able to read it. Even so, it is not interaction, but the story of interaction.

In organizations interaction always involves the dimensions of plurality and complexity (Schön, 1992; Caldwell, 2005). Therefore organizational communication, as cognition, is necessarily distributed and non-linear. For a long time, research on communication assumed the abstract, individual view as a foregone point of departure. But the individual view doesn’t necessarily mean isolation. For example, the ambulance driver running alone and trying to reach his destination is always connected via telephone or radio with his colleagues in the control room. He is a part of a network. As a result, if communication with the control room suddenly stops for some reason, the odds of the rescue being successful decrease dramatically. So the best performance of the ambulance driver is not a one-man show, but a collective play, where some roles are assigned but others are not predictable. The victim, the co-stars (the relatives), the supernumeraries and the scene constantly change in some way. Consequently, operators are not looking for originality *per se*, but for fruitful integration of individual contributions.

**Overlapping awareness**

At first glance, the activity of EMRs seems to be structured along a classic tree organizational scheme, based on the division of duties and workflow processes. However, closer observation shows that operators are engaged daily in sharing information and knowledge on a common subject (aiming to achieve an effective rescue), rather than in accomplishing an individual and isolated job. Cognition is widely distributed among operators, who have different know-how, skills, and “horizons of observation” (Hutchins, 1993).

But at the same time, many tasks and practices overlap between operators. From a traditional management standpoint, this type of organization doesn’t make sense in economic and productive terms. There are some explanations, however, for this
apparent paradox. First of all, a certain degree of overlap between the activities of operators allows them to keep the evolving situation of a case in check, much more than delegating to a single operator would. Nobody is expected to cope by themselves with a case because even an apparently straightforward situation can often turn out to be a difficult one. Then operators also know that an essential feature of teamwork is being sensitive to the requests of colleagues, being available quickly to lend a hand. Besides, a partial sharing of rescue tasks is important for practical reasons too. Although maps and computers become more and more accurate and up-to-date, colleagues always prove to be the best source of information. For example, the EMS observed is located in an area with a lot of traffic, between a lake and a mountain. Some operators are recognized as being “specialists” in avoiding traffic jams, others in identifying little beaches on the lake, and others in evaluating mountain conditions for rescue.

This attitude to mutually given help and shared information is a core characteristic of the EMS’ work, aimed at strengthening the situational awareness of the group. As Blandford and Wong note, “maintaining awareness of the situation is often key to success, particularly in dynamic situations that demand rapid decision making. (Wong and Blandford, 2004: 422)”. This kind of awareness is a critical factor in accomplishing the coordination work in the EMS control room, where different people are involved in the rescue process, receiving calls, dispatching ambulances, and monitoring rescue operations. Several studies highlighted that this coordination was mainly achieved thorough continual “overhearing” on the part of the staff. Normally, the operators are speaking in loud voices – especially when a potentially dangerous situation is supposed to be approaching — allowing the colleagues to overhear the conversation and alerting them to a possible major accident. At the same time, operators are always sensitive to specific words that are emerging from calls taken by colleagues, like “stroke”, “faint”, “heart attack” and so on; being aware that someone might need speedy support at any time (Heath and Luff, 2000, 97-100).

Surface thinking

The analysis of EMS communications draws attention to an organizational dimension, which overcomes previous metaphors of space and object. In the EMS control room a considerable amount of activity is commonly conducted by individual operators, requiring a minimal contribution from other colleagues in managing ordinary administration cases (even though the routine may suddenly be broken by a serious event at any moment). When an urgent request bursts into this calm frame, work in isolation quickly stops, making room for the emerging texture of interconnections between operators. The division of tasks recedes against the background of the scene, as cooperation becomes highly valuable. Many people interweave different types of expertise in managing the same situation – for example striving to accurately locate an unfamiliar place – their skills overlapping, creating a new, temporary configuration.

Obviously, this type of intertwining is not immune to the risk of tensions and misinterpretations arising because sharing a common activity from different perspectives calls for continual adjustment and translation work, which is not automatic, especially under conditions of pressure. But dealing with the ambiguity is just a specific feature of this dynamic composition, which operates by definition in unstable contexts aiming to decrease the amount of turbulence.

What kind of connection typically emerges from this situation? A sort of blended – or rather fuzzy – quality characterizes this aptitude for creating stable and temporary patterns, ready-to-use. They must be thorough and flexible, open and secure, individual
and collective at the same time. Space and objects cannot help us to explain this kind of connective relation. This special feature of emergency work can be better understood referring to the notion of rhizome developed by Deleuze and Guattari.

Multiplicities are rhizomatic, and expose arborescent pseudo multiplicities for what they are. There is no unity to serve as a pivot in the object, or to divide in the subject. There is not even the unity to abort in the object or "return" in the subject. [...] An assemblage is precisely this increase in the dimensions of a multiplicity that necessarily changes in nature as it expands its connections. There are no points or positions in a rhizome, such as those found in a structure, tree, or root. There are only lines. (Deleuze and Guattari, 2004, 8-9).

The rhizome is a special kind of stem growing underground horizontally and developing roots and leaves that create nodes along its length. Deleuze and Guattari introduced the concept of the rhizome in order to outline an alternative way of thinking about categorization. Western thought is historically founded on the tree model, which expresses a static and hierarchical method to give order to the world, and involves a preference for profundity against superficiality. Conversely, the rhizome shows the positive meaning of producing “surface thinking”, which allows for thinking about the plurality of evolving patterns of intertwined lines.

The rhizomatic model helps us to conceive organizational communication in a dynamic but non-linear way, as a rapid creation of temporary clusters. These clusters are, at same time, solid and flexible enough to effectively fulfill the requests of the surrounding context, according to the course of action described by Engeström as knotworking, that is, a “rapidly pulsating, distributed, and partially improvised orchestration of collaborative performance between otherwise loosely connected actors and activity systems” (2008: 194). Observed from this standpoint, EMS is a network where ties are more relevant than knots, because processes tend to preponderate over the structure. As a result, spaces, boundaries, and objects are partially reshaped in a flowing way. This process originates connectivity as a new and different dimension characterized by fluidity and the plasticity of interactions.

**Fluidity in Organizational Communication**

Analyzing EMS activity as an ongoing and open course of action leads us to delineate connectivity as a more advanced level of organizational communication. This level represents the core dimension of activity, as the different components of teamwork are absorbed and transformed, creating a fluid operative framework.

It should be noted that such a framework is not an uncommon feature of EMS organization – a sort of extraordinary “state of grace” reached when exceptional situations arise – but a typical trait of daily work. Nevertheless, even though not infrequent, connectivity is always ephemeral in some measure, needing to be constantly recreated in regard to external situations that are in large part uncertain and unknown. The core competence of EMS lies in the ability to perceive and respond to change in real time. This “negative capability” – according to the renowned expression by John Keats – allows the organization to deal with the flux of new events, and engenders sense-making from the indeterminacy and ambiguity of the situation (Chia and Morgan, 1996).

The elusive nature of such an activity seems to defy analysis, obstinately pulling it back towards the well-known and reassuring metaphors of space and objects. Even if underrating the role of space and objects in theorizing organizational communication is not appropriate, it must be strongly considered that processes are not explainable only in
these terms because of their weakness in grasping the “real things” about connectivity: awareness, fluidity, and suspended animation.

Repairing the world with words

A large part of EMS activity can be seen as an effort to take back to routine events that are anomalous by nature (heart attacks, car accidents…) through codified procedures of rescue. First of all, emergency work is a strategy to force into order unexpected events, even if the arrangement is often only partial and provisional, as in this conversation between the operator in the control room (O1) and the field operator (O2), concerning the rescue of a newborn:

1. \(O1\) But is the baby breathing anyway?
2. \(O2\) Yes, as far as we can see [+] we can hear him breathing but now we just aren’t able to check the saturation [with a trembling voice] on the pediatric saturation-meter because it’s too [+++]
3. \(O1\) Too?
4. \(O2\) Chaotic! [Nearly laughing]
5. \(O1\) But, listen have you –
6. \(O2\) Yes, he can breathe ... _ breathe because the chest &yes&
7. \(O1\) twenty breaths per minute=
8. \(O2\) = Yes _ yes
9. \(O1\) Mhm
10. \(O2\) But now he’s crying, he’s crying
11. \(O1\) Ok, it’s all right
12. \(O2\) Is the doctor coming? [The baby is crying in the background]
13. \(O1\) Yes, sure, he’s nearly there
14. \(O2\) Ok, &all right&
15. \(O1\) &put the oxygen on&
16. \(O2\) Yes, all right
17. \(O1\) So wait there, they are on the way
18. \(O2\) Yes
19. \(O1\) Ok [the baby is crying loudly in the background]

As shown by the conversation – over-excited, as often happens when the life of a newborn is at stake – communication is usually something more than a plain transmission of facts. Language is not a simple instrument to convey information, mirroring the world in some neutral way. The traditional model of information transfer explains communication in terms of moving facts from one individual mind to another, being careful to reduce the waste of information during the transition.

Conversely, ethnomethodology and conversation analysis provide much evidence that everyday communication is not such a “cold” process, but a warm and complex interaction seeking to establish shared meanings among the actors involved (Garfinkel, 2002; Browning and Duranti, 2005). People shape reality through the words used, for example, as they talk during an emergency operation, implicitly expressing reciprocal doubts and appraisals about the best way to manage specific circumstances. As the regular framework has been lost, in emergency situations the words of participants contribute literally to forming a new reality, outlining temporary landmarks that allow them to confine the unknown to more stable patterns.
Streaming into discontinuity

The ability to produce new structures of meaning in real time is one of the most fascinating traits of EMS activity. This aptitude is often related to another essential attribute of emergency work, the search for fluidity. Like the ability to “stream into discontinuity”, fluidity is a core capability in emergency services: keeping in contact simultaneously with the caller and the crew on the ambulance, translating fragmented information; perceiving the advisability of lending a quick hand to a partner during a critical call (and knowing when to return to the sidelines); driving the ambulance at maximum and constant speed, trying to avoid the sudden hazards of traffic.

Fluidity, as emerges from EMS analysis, is not running without obstacles, but maintaining flow in spite of obstacles. In some aspects, the activity of an expert team of EMS at work can be compared to a skilled musical ensemble – perhaps more in jazz than another genre of music (Cunha, Cunha, and Kamoche, 2002). Operators coordinate their activity with a nonchalant tone, apparently effortlessly, in a “natural” way. This idea of naturalness in action and communication is pivotal in describing the role of fluidity in organizational contexts.

According to the Merriam-Webster dictionary, “fluid” can have three essential meanings:

- having particles that easily move and change their relative position without a separation of the mass and that easily yield to pressure;
- characterized by or employing a smooth, easy style;
- available for various uses:

In my opinion, all three meanings reflect in some way the dimension of fluidity typifying EMS organization. Members of teams specialize in different tasks, but at the same time they remain highly inter-functional. Assignments are distributed in order to maintain a certain amount of flexibility, becoming “available for various uses”, that is, able to fit the large variability and unpredictability of situations occurring during emergency work. Thus, “easily yield to pressure” doesn’t imply an inclination to produce breakdowns, but the ability to modulate efforts, becoming moldable to meet the specific requirements of different calls. A good EMS knows how to enhance input from the outside world, taking on a shape able to reduce friction caused by events.

At the same time, another relevant feature of fluidity is the “smooth, easy style” which underpins the execution. A fluid performance is not likely a difficult exertion, achieving the goal only for a short time and as a result of a visibly major effort. Conversely, the play is largely run en souplesse and typified by a sort of overall grace. Obviously, we know that it has taken a long time and great diligence to develop such mastery, but this is exactly what makes this kind of accomplishment more intriguing. Moreover, even if it represents a temporary condition, the state of grace involved in a performance is not instantaneous. It always lasts for a certain amount of time, owning duration.

So, a fluid performance is interesting because it seems to carry the actors and the audience away to a sort of parallel dimension, where the stream of experience is more fulfilling, and the action more fluid. However, we don’t mean to suggest that fluidity involves a sort of platonic view – the performance as a form of revelation giving access to a superior, ideal world. Nonetheless, this attribute of passing by continuously overcoming the usual restrictions undoubtedly refers to a transcendent quality, as many researchers emphasized (Turner, 1969; Eisenberg, 1990).
Intertwining flows

In many respects, the transcendent quality implied in emergency work might be connected to the notion of flow experience developed by Csikszentmihalyi. According to him, flow experience is a condition “in which people are so involved in an activity that nothing else seems to matter at the time; the experience is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.” (1990: 4). High fulfillment, engagement and focused attention are in fact essential elements of a demanding rescue service, even if the third dimension designated by Csikszentmihalyi – the loss of the perception of time – is actually largely not applicable to emergency operators, which must, conversely, continually be aware of time as a valuable and limited resource.

Emergency work can be a really absorbing experience, although it doesn’t entail escaping from time and space, but rather coping effectively with them. As Weick and Sutcliff highlight, trying to handle the course of events in managing unexpected circumstances involves two major strategies: anticipation and containment (Weick and Sutcliffe, 2007). Anticipation means that the people concerned in rescue operations are preoccupied with failure, reluctant to simplify, sensitive to operations and committed to resilience; while the containment strategy relates to the ability to promptly react in an effective way to unforeseen events. Besides, more than an individual, ecstatic occurrence as in the picture offered by the Csikszentmihalyi’s analysis, the kind of flow experience that EMS experience through an accomplished integration of anticipation and containment makes reference to a collective and shared undertaking.

So, a feeling of fluency in mutual actions and communication plays an important role in improving the sense of self-assurance and efficacy of teams faced with risk. Though this is a typical trait of working in emergency services, an analogous feature can be recognized in other cooperative activities such as air traffic or underground control rooms (Heath, Hindmarsh, Luff, 2000). In such organizations, fluidity identifies a core component within the process of constant reciprocal orientation that characterizes everyday practices as a frame for coordinated action in the workplace. For the most part, coordinated action is not an issue of formal and abstractly designed agreements about contents and limits of the assignments of different operators, but the fruit of a fine, delicate mutual regulation of the mobile boundaries and the overlapping areas of everyone’s job. Once again, specialization is better understood not in terms of accuracy in dividing or parceling out tasks, but as a way of sharing and intertwining activities, which become a common ground where organizational communication can be built. As Schmidt states, “actors regulate their monitoring quite delicately so as to adjust the degree of obtrusiveness to the requirements of the situation, and they similarly display their own work in a form and at a level of granularity which is attuned to the situation facing their colleagues” (Schmidt, 2002: 291-292).

Spreading wise crumbs

In order to be effective, this communicative dance – not so far that we ignore each other, not so near that we tread on others’ toes – is punctuated by continual and minimal cues, often implicit, that allow the operators to modulate reciprocal interactions. Usually, EMS staff sharply contrast calls for help coming from outside with professional communication taking place between operators. Understandably, calls to 911 are frequently “hot”, overexcited, dazed and fragmented. Therefore, a major part of operators’ work is arranging the dialogue in some way, trying to grab the essential information in order to start the rescue. Conversely, communication between medical
personnel is commonly depicted as “cold”, clear, and composed, because losing one’s head in a difficult situation is never allowed and strongly stigmatized. Conversations between operators, however, are actually far less straightforward than they are described. Sometimes, looking for a quick agreement by phone during critical and evolving situations may turn out to be quite difficult. For example, an unsuccessful rescue process concerning a young woman gave rise to this phone conversation between an operator in the control room (O) and the doctor (D) in the ambulance:

20. O: Thirty-one years old yes. Maybe if she had arrived at Mornago, she would have been saved.
21. D: Oh no, there is absolutely nothing in Mornago.
22. O: What nothing?
23. D: There is no CAT¹, there is nothing.
24. O: Well, excuse me, but first you stabilized her, then you could have decided to do the rest.
25. D: Excuse me, but as we couldn’t do a CAT scan, we couldn’t know what was wrong with her.
27. D: Okay.
29. D: See you.

“She would have been saved” could be read as an implicit judgment of the accuracy of the doctor’s decision. So, the latter drastically refuses this interpretation of his conduct. Nonetheless, operators usually avoid making this kind of comment during phone communication, both for legal (the conversations of EMS are constantly recorded) and personal reasons (overtly criticizing a colleague might be disruptive in a relationship). For the most part, daily communication in EMS is much more tactful and subtle, aiming above all to reduce the multiplicity of interpretations originating from the wide-ranging uncertainty of rescue situations. To that end, exchanges are largely characterized by minimal conversational cues that operators continually put out during the phone calls, as if spreading small “breadcrumbs” to orient each other along the path of mutual interaction (Bødker and Christiansen, 2006). Strengthening the sense of collaboration and mutual orientation, these “breadcrumbs” allow operators to ensure the coordination of their interventions, even when managing the job from different locations (and consequently, viewpoints).

Coordinating options

In recent years, the process of creating coordinated action has been the subject of several studies in organization literature, attempting to define the core dimensions of team-working in terms of centers of coordination (Suchman, 1997), action nets (Czarniawska, 2004), knotworking (Engeström, 2008), and computer supported cooperative work (Luff and Heath, 2000; Heath, Hindmarsh and Luff, 2000). Although from different theoretical perspectives, fluidity of communication represents a common concern of these research projects, aiming to explain how organizations try to successfully cope with an increasingly troubling and unstable environment. For a long time, sharing common values has been identified by organization theory as a crucial factor in order to clarify how collaboration can generate and grow in workplaces. But

¹ Computerized Axial Tomography
the postmodern approach has widely criticized this assumption, questioning the supposed neutrality of values, and claiming their ineluctable implosion in the contemporary world. This point of view, largely developed based on Foucault (1977), Derrida (1974) and Lyotard’s (1979) reflections, is trenchantly summarized by Michael Douglas’ famous quote in *Wall Street* (1987):

> The point is that greed – for lack of a better word – is good. Greed is right. Greed works. Greed clarifies, cuts through, and captures the essence of the evolutionary spirit. Greed, in all of its forms – greed for life, for money, for love, knowledge – has marked the upward surge of mankind.

In a less cynical way, it could easily be argued that EMS operators certainly share a number of ethical and professional principles – as the importance of helping to save human lives, or the aspiration to do well-accomplished work. But since these values generally remain in the background of everyday tasks, as general and tacit assumptions, they can’t offer a consistent explanation of fluidity as a widespread feature of rescue interactions.

Largely inspired by the ethnomethodological approach, research on coordinated action has turned its attention to this subject, aiming to develop detailed analysis of day-by-day conversations and practices that allow working teams to build fluid performances. This analysis disproves the traditional view of fluidity as a natural outcome of common values clearly identified by social actors. On the contrary, fluid interaction arises from continued negotiation between operators, aiming to make sense of ambiguous circumstances and to outline a “good-enough” draft to enable swift decisions and actions, as in the following example:

31. \[D\] Tell me, I’m on the way.
32. \[O\] Ok, listen, man with previous neurological problems, so trouble with swallowing because of that. He was eating
33. \[D\] Mh
34. \[O\] Gone into arrest, that is they said he was choking, so_probably_a_foreign_body, gone into respiratory arrest and ... ok_now_he’s_cyanotic.
35. \[D\] But now he’s in arrest.
36. \[O\] Yes, in arrest, probably dead but_this_is_off_the_record_meaning_probably you’re going
37. \[D\] BLS?²
38. \[O\] It’s in front of you... but the problem actually is you’re arriving/both of you are late, there is a foreign body and-
39. \[D\] But I have to go on, I can’t really-
40. \[O\] No_no, sure_sure. I mean_ I would only update you about the real situation... unfortunately both of you are arriving a !bit! late, it is a distance problem so_do_the_best_you_can, ok?
41. \[D\] Thank you &bye&
42. \[O\] &bye_bye&

The sequence underlines the way effective communication between staff depends on situated agreements that are under joint scrutiny: mentioning the patient as being “probably dead”, the control room operator suggests to the doctor that the ride might be late (that is, useless). The aim of the operator is to avoid investing human and technical means in a hopeless situation, saving limited resources for subsequent incoming calls. At the same time, the operator statement implicitly infringes an EMS rule, as in legal

² *Basic Life Support*, a kind of ambulance provided with basic life saving equipment.
terms ascertaining the death of a patient strictly falls within the doctor’s competence. Moreover, the following comment during the conversation (“this is off the record”) turns out to be a real paradox, as both operator and doctor are aware that communications between control room and ambulance are routinely recorded. So, the doctor may only reaffirm the necessity of persisting in the rescue operation (“I have to go on”). Realizing his blunder, the operator realigns himself with the doctor’s statement (“Sure, sure”), outlining a viable excuse (“It is a distance problem”). So, a “good enough” draft for action is established.

In the following calls about the case we hear that the man was not in fact dead. The doctor’s decision proved to be correct.

Values and rules

What are at stake in the previous conversation are not the basic values shared by staff (save human lives, spare resources), but ways of interpreting a vague situation accordingly to rescue guidelines and protocols. On the one hand, guidelines and protocols are rules for decision-making and action in uncertainty, generally laid down in the shape of a decision tree; on the other hand, they prevent the team from arguing about values during the EMS operations. Time is obviously the first asset during rescue. But other values (life, duty, selflessness…), though universally shared among staff, are highly ambiguous. Incontestable in the abstract, they become questionable and hard to manage in practical situations. As a result, opposite decisions may actually be made in the name of life.

Hence, guidelines and protocols interpose a technical and neutral diaphragm between values and decisions. Based on abstract rationality and self-evidence, rules apparently don’t leave room for discussion, but only for action. If values are warm (sometimes hot), rules are cold.

Nevertheless, contexts are very often opaque and unpredictable, constantly involving operators in difficult interpretation work regarding critical factors like information, resources, and practical solutions (Gherardi, 2008). In many cases decisions turn out to be correct and “natural” only ex-post (Latour, 1993). Therefore, as we saw in the previous dialogue, even if professional communication always tries to remain focused on specific topics, frequently cooperative work cannot avoid touching the sensitive boundary between roles and tasks of operators, calling for consequent “damage control” aimed at safeguarding and maintaining friendly relationships among the staff (Hutchby and Wooffitt, 2008).

Designing emergency

By and large, fluidity is not an outcome of shared values. Values are organizational symbols, assumed and taken for granted, sometimes celebrated during annual meetings, rarely questioned in everyday communication (as arguing about values implies interrupting work). They are a polysemic frame, broad and vague enough to convey different aims and experiences. Conversely, rules are agreements about how the canvas must be painted. In EMS rules are, in theory, unambiguous, and laid down with the aim of avoiding arguments. In practice, most of the rescue job is concerned with how to reach agreements on a pragmatic interpretation of rules, in order to cope with the specific constrains of the situation.
In fact, the quality of communication in EMS relies far less on mechanically applying rules than on the perceptive skills of operators facing changeable circumstances. Fluidity specifically relates to the way of enhancing and transforming such a sensing capability in an effective, cooperative action. This allows, as Weick emphasizes
to foster social mechanisms such as pooled interdependence with its limited demands for coordination, minority influence, partial inclusion, and loosely coupled systems, in order to weaken stereotyping, strengthen situational awareness, and restore adaptability (Weick in Boland and Collopy, 2004: 43).

For this purpose, rescue activity can, in many respects, be compared to design work. Design, especially during the first phase of a project, is typified by a liquid state, as information about requirements is often flowing in the workspace in a haphazard and contradictory way (Gehry in Boland and Collopy, 2004). Such an undetermined activity leads to incomplete outlines, “scary” models, called schreck by Gehry – literally “nervous” – models, as generally people feel unease when faced with uncertainty.

Nonetheless, learning to work with provisional models is very valuable, because as the process crystallizes, going back and reshaping becomes difficult and costly. Designers usually manage this exploratory stage by working out sketches. A sketch is an open graphic system, where symbols are undetermined enough to be placed and remodeled in different ways and for different aims (Goel, 1995: 193-195). Sketching allows the pundits to investigate the evolutionary lines of an ongoing project, showing in a non-destructive way what virtual scenarios could loom based on different decisions. So, hints and adjustments regarding the project can flow freely, avoiding the freezing of conclusions too early, and leaving room for lateral transformations, which are a vital factor in accomplishing fluid performances.

Correspondingly, a remarkable part of EMS activity, above all as complex calls are incoming, is developed as a collective sketch where operators are communicating briskly in order to collect and give meaning to fragmented information. This condition of suspended animation might look muddled and puzzling to outside eyes. Nonetheless, it helps to enable the production of temporary structures, which are apparently “ugly”, but very practical.

For sure, they do not seem to be the outcome of a carefully planned design and project management. Rather, they look like “swampy”, meandering systems, congested and chaotic, but overall not performing too badly (Lanzara, 1999: 344).

Ambiguous landscapes

It is common knowledge that creating and maintaining open working structures, capable of providing valuable and fluid communication, is not an easy task. Communication in contemporary organizations is frequently oriented towards strengthening a formal and efficient style, rather than making room for flexible and effective approaches. Indefiniteness is essentially seen in negative terms, as a constant risk for misunderstanding and running riot. Forced by its nature to confront the unexpected, EMS activity shows that ambiguity can also play a positive role in decision-making, provided that we understand it not simply as a blur to remove, but as a chance to enlarge our usual perspective. The following call for help is a good example (C = caller, O = operator in the control room).
Address is a common source of ambiguity in EMS communication, often giving rise to conflicts between operators and callers. In the dialogue, conflict arises due to the implied difference over orientation systems. The EMS rescue is founded on abstract spatial representations, aiming at classifying calls according to analytical criteria like street names or geographical coordinates (if the accident happens in an inter-urban area). Conversely, the callers’ orientation is usually based on concrete and synaesthetic schemes, so they are inclined to point out physical benchmarks like post offices or banks (or a factory, like on this case).

The mismatch between the two systems may have serious consequences on the efficiency of the rescue, as arguing about the address is time-consuming, and dispatching the ambulance is useful only with a clear destination. Moreover, people calling for help – generally relatives or friends of the victim – are frequently dazed or shocked: hardly able to rationally reply to the operators’ inquiries – on the contrary they often tenaciously cling to their cognitive schemes. Therefore, operators cannot expect mindful compliance from callers to the EMS procedures (as prescribed by the traditional medical model). Conversely, they have to admit and to use the initial
ambiguity of the callers’ account in order to get the core information for dispatch. Thus, keeping the communication system open, carefully listening and orienting the conversation to the point, is an essential feature of the operators job, with a view to assure the most fluid (that is quick) communication.

The open picture

Assuming – instead of simply rejecting – ambiguity as a constructive part of the task is a key element in effectively performing in a complex environment. As Goodwin observes (2000: 1508-1509), opacity is valuable since it gives an opportunity to preserve flexible room for action:

It is possible to adequately come to terms with much, perhaps most, of what is happening in many interactions while leaving some fields opaque and unanalyzed. […] Indeed, this acceptance of partial opaqueness is not only a possibility for analysts, but one that is systematically exploited by participants themselves in professional settings characterized by asymmetries in knowledge and access to the resources that make up the setting. […] We can use the visible orientation of the participants as a spotlight to show us just those features of context that we have to come to terms with if we are to adequately describe the organization of their action.

Communicative clarity is generally identified with the completeness of detail. But a mass of details may be misleading as much as inaccuracy is, as nowadays information is often overflowing rather than lacking. Dodging paying attention to all details, otherwise fluid communication involves a more qualitative dimension, focused on sensitively detecting the revealing point in order to get a global picture, which is probably slightly out of focus and fleeting, but reliable enough for decision-making. As Weick and Sutcliffe (2001: 167) state, “ambivalence builds resilience”: enhancing the role of sense-making, fluidity helps to provide a provisional, but functional, “big picture”, allowing, at the same time, to remain open to multiple viewpoints, suggestions, and solutions arising inside and outside the organization.

Conclusion

In contemporary organizations, coping with change largely involves getting a reliable picture of a situation in a highly unstable environment, in order to promptly support the continuum of decision and action. Therefore, as we have tried to show throughout this article, communication is required in order to overcome traditional models based on spatial metaphors, turning on to organizing as a process developed through connectivity and fluidity.

In an increasingly complex, widespread, and virtual communication context, the need for connectivity tends to question the usual organizational compartmentalization, based on clearly marked boundaries. Facing the request for effective answers in real time, separation of spaces and functions withdraws, leaving room for blended areas and temporary patterns centered on the ability at overlapping knowledge and resources in an integrated way. This kind of emergent coordination is founded on the one hand on objects – as artifacts allowing mediating actions and relationships, on the other hand on language – as an instrument of constant weaving of communicative frames. As a result, a “surface”, a non-linear, rhizomatic model of communication arises.
At the same time, connectivity development is highly dependent on fluidity as a crucial factor. Producing new structures of meaning on the spot calls for fluidity as the ability to “stream into discontinuity”, dealing with new and undefined situations. These situations are only partially manageable with reference to rules and guidelines, conversely demanding a continual search for workable and shared solutions. Consequently, a design model emerges as a new kind of organizational communication able to work employing provisional schemes, and utilizing ambiguity naturally embedded in situation as a resource.

As shown by the analysis of EMS activity, creating fluid connections gives rise to light and modular communication arrangements, providing provisional but highly reliable organizational structures, based on net-like adaptability to different events and contexts. Hence, EMS experiences helps us to identify new possible paths in managing organizational communication within an ever more complex world.

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